

Toronto Star Livestream – Toronto Zoo Lemurs (Grade 4/6)

The following activities are intended to be used as a follow-up exercise after viewing the Toronto Zoo ring-tailed lemurs on the Toronto Star’s livestream.

ACTIVITY ONE – Madagascar: a biodiversity hotspot

Madagascar is an island off the eastern coast of the African continent. As the 4th largest island, Madagascar is rich in species diversity and is considered a “hot spot” for biodiversity as many of the species are only found on this island. Let’s compare how the species diversity of Madagascar differs from our own province (Ontario). In the column marked “> or <”, indicate which geographic location has the greater species diversity.



	Madagascar	> or <	Ontario
Mammals	200		78
Mammals (Lemurs)	101		0
Reptiles	400		29
Amphibians*	>310**		26
Amphibians (frogs only)	311		13
Plants	15,000		Approx. 5,456

*Scientists continue to discover different species of amphibians, specifically frogs on Madagascar so the number of species is an approximate.

As you can see from the chart, Madagascar has a greater diversity of species than Ontario and all within a geographic area 50% smaller than Ontario. Beyond just having so many species living on the island, many of the species are **endemic** to the island, meaning they cannot be found living anywhere else in the world. Research online and discover 5 animal and 2 plant species that are endemic to Madagascar.

Endemic Animal Species

Endemic Plant Species

ACTIVITY TWO – Forested Habitat of Ring-tailed lemurs

Looking into the lemur exhibit, what do you see? Did you notice the large tree-like structure? How do the lemurs use the tree?

Ring-tailed lemurs live in forested areas naturally found in the south and southwestern portion of the island. The area is covered with gallery forests, dry open scrub (euphorbia bush) and spiny forests which the ring-tailed lemur and 5 other lemur species lovingly call “home”. Lemurs rely on the forest for their survival and unfortunately all lemur species are being threatened by habitat destruction. Using online resources, complete the questions below to discover more about two of these unique forests.



Madagascar Spiny forest

Madagascar Spiny Forests

1. Provide a description of the spiny forest. What is the climate like? What type of plants or trees grow in these spiny forests?
2. Why are spiny forests disappearing?

Madagascar Gallery Forests

These forests are also called riverine or tamarind forests as they grow along the riverbanks in the south where water is sufficient to support the tamarind tree.

1. Why is the tamarind tree an important resource for the ring-tailed lemur? How does the ring-tail lemur help the tamarind tree?
2. Why are these forests disappearing?

Suggested resources:

<https://www.lemurreserve.org/ako-project/>

<https://www.worldwildlife.org/ecoregions/at1311>

Photograph credit: <https://www.lemurreserve.org/ako-project/>

ACTIVITY THREE – Built to survive in the forest

It's not an easy job for ring-tailed lemurs to find food, avoid predators and survive in the diverse environments they inhabit. The lemurs have many physical and behavioural adaptations (or creature features) that provide them an edge in the game of survival.

Tails

After observing the lemurs moving throughout their exhibit, what did you notice about their tail?

1. How many bands of rings are on their tail? _____

Hint – it's a lucky number!

2. Is the tail longer or shorter than their body? _____

3. When does the lemur use its tail for balance?

4. Describe how the lemur uses its tail as a visual flag? Why would that be helpful?



Photo credit: Toronto Star

Did you know that male lemurs use their tail in “stick fights”? Read more about stink fights on the Toronto Zoo’s animal webpage: <http://www.torontozoo.com/animals/Ring-tailed%20lemur>

Eyes

Like humans, other primates and most predators, ring-tailed lemurs have eyes facing forward. Having binocular vision and using two eyes is an important adaptation for the lemur. Try this little experiment to discover the answer?

- Take a 1.5 m piece of string and stretch the string from just under your nose to the end of your outstretched arm.
- Imagine you are a lemur and the string is a branch. Looking out, what do you see? Do you will see two “branches” (strings) stretched before you?

- Close your right eye and look out with just your left eye and then close your left eye and look out with your right eye. What happened to the string?
- Did you notice that the two strings are now separate images – one from each eye. By looking at different spots on the string, you will see how the crossover point moves.



Photo credit: Toronto Star

Q. Why would binocular vision be important if you were a lemur?

Did you know that ring-tailed lemurs also have enhanced nighttime vision? A layer of cells called the tapetum lucidum located long the back of the eye acts like a mirror and reflects light back through the retina.

If you were a lemur, how would this adaptation be useful to you?

Opposable digits



Photo credit: Toronto Star

Ring-tailed lemurs have specialized hands and feet to help them move through the trees and on the ground.

Compare your hand and foot to those of the ring-tailed lemur. What similarities do you see? What differences do you see? List them below:

	Similarities	Differences
Hand		
Foot		

Think of three reasons having an opposable thumb and big toe would be useful adaptations for the ring-tailed lemur.

1. _____
2. _____
3. _____

Scent Communication

Did you notice the long pointy snout of the ring-tailed lemur? Smell is an important communication tool for lemurs. They use smell to identify and mark territories, foraging routes, mates, competitors and predators. Ring-tailed lemurs have scent glands on their wrist, chest and anogenital area which is used to mark territory. Males also have a spur on their wrist that they use to pierce tree branches before scent marking.

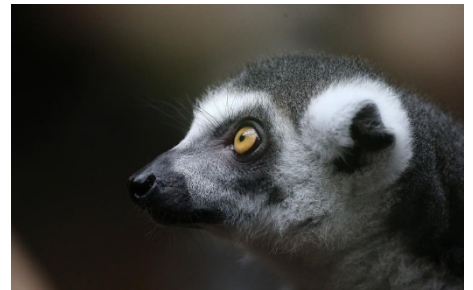


Photo credit: Toronto Star

Take a scent journey in your own territory. As you travel from space to space, note the scents you smell below in the provided space. Is it a scent associated with a product you or your family uses? Do you have a favourite scent that only you wear? Do you smell any food items?

Scent journey



Resources Credits:

www.conservation.org

<https://lemur.duke.edu/discover/meet-the-lemurs/>

<http://www.iunc.org>

inaturalist.ca

www.lemurconservatoionnetwork.org

www.lemurreserve.org

Ontarionature.org

Onplants.org

www.uoguelph.ca

www.worldwildlife.org

www.wildmadagascar.org